

REMARKS

I. Introduction

In response to the final Office Action, Applicants amended claim 1 to further clarify the subject matter of the present disclosure. Support for the amendment to claim 1 may be found, for example, on page 9 of the specification. No new matter has been added.

A Request for Continued Examination (RCE) is being filed concurrently with this amendment.

For the reasons set forth below, Applicants respectfully submit that all pending claims are patentable over the cited prior art references.

II. The Rejection Of Claims 1-3, 5 And 6 Under 35 U.S.C. § 102

Claims 1-3, 5 and 6 are rejected under 35 U.S.C. § 102(b) as being anticipated by Dobson et al. (USP No. 6,265,823). Applicants respectfully submit that Dobson fails to anticipate the pending claims for at least the following reasons.

With regard to the present disclosure, amended claim 1 recites, in-part, a phosphor element comprising: a pair of electrodes facing each other; and a phosphor layer interposed between the pair of electrodes and including a semi-conductive phosphor fine particle in which at least a part of a surface is covered with a conductive organic material, wherein the conductive organic material is chemically adsorbed on the surface of the semi-conductive phosphor fine particle by a dehydration reaction between a hydroxide group of the surface of the semi-conductive phosphor fine particle and the conductive organic material.

One feature of the present disclosure is that the conductive organic material which covers the surface of the semi-conductive phosphor fine particle is chemically adsorbed on the surface of the fine particle by a dehydration reaction between a hydroxide group on the surface of the fine particle and the conductive organic material. For example, as discussed on page 9 of the present specification, as a conductive organic material for causing chemical adsorption on the surface of the semi-conductive phosphor fine particle, one example is an organic material having a functional group such as a hydroxyl group. A dehydration reaction is performed with the loss of a hydroxyl group (-OH) and a hydrogen group (-H) on the surface of the semi-conductive phosphor fine particle to fix the conductive organic material to the surface.

In contrast, Dobson teaches the conductive organic material PVK which includes a nitrogen group having no hydrogen atoms attached to it. As a result, the PVK cannot perform the chemical adsorption with the conductive organic material by way of a dehydration reaction between a hydroxide group of the surface of the semi-conductive phosphor fine particle and the conductive organic material.

Accordingly, it is clear that Dobson fails to disclose the limitation of amended claim 1 of a conductive organic material which is chemically adsorbed on the surface of the semi-conductive phosphor fine particle by a dehydration reaction between a hydroxide group of the surface of the semi-conductive phosphor fine particle and the conductive organic material.

As the Examiner is aware, anticipation under 35 U.S.C. § 102 requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference, *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983). As Dobson, at a minimum, fails to disclose a phosphor element comprising: a pair of

electrodes facing each other; and a phosphor layer interposed between the pair of electrodes and including a semi-conductive phosphor fine particle in which at least a part of a surface is covered with a conductive organic material, wherein the conductive organic material is chemically adsorbed on the surface of the semi-conductive phosphor fine particle by a dehydration reaction between a hydroxide group of the surface of the semi-conductive phosphor fine particle and the conductive organic material, it is clear that Dobson fails to anticipate amended claim 1. Therefore, it is respectfully requested that the rejection of claim 1 under § 102 be withdrawn.

III. The Rejection Of Claims 7 And 8 Under 35 U.S.C. § 103

Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Dobson in view of Tsukada (USP No. 4,937,150); and claims 7 and 8 were rejected as being unpatentable over Dobson in view of Hseuh et al. (USP No. 5,587,329). Applicants respectfully traverse these rejections for at least the following reasons.

With regard to the present disclosure, claim 8 recites, in-part, display device comprising: a luminescent array in which phosphor elements are arranged in a plane, wherein the phosphor element comprises: a pair of electrodes facing each other; a phosphor layer interposed between the pair of electrodes and including a semi-conductive phosphor fine particle in which at least a part of a surface is covered with a conductive organic material.

It is alleged that Dobson discloses a semi-conductive phosphor fine particle in which at least a part of a surface is covered with a conductive organic material, such as PPV and PVK. However, as previously discussed, Dobson fails to disclose that the phosphor elements are arranged in a plane. The recited passage appears silent with regard to this limitation.

Furthermore, Hseuh does not appear to remedy this deficiency. Accordingly, Dobson, alone or in combination with Hseuh, fails to teach or disclose all of the limitations of claim 8.

In order to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 580 (CCPA1974). As Dobson and Hseuh, at a minimum, fail to describe a display device comprising: a luminescent array in which phosphor elements are arranged in a plane, wherein the phosphor element comprises: a pair of electrodes facing each other; a phosphor layer interposed between the pair of electrodes and including a semi-conductive phosphor fine particle in which at least a part of a surface is covered with a conductive organic material, it is submitted that Dobson and Hseuh, alone or in combination, do not render claim 8 obvious. Accordingly, it is respectfully requested that the § 103 rejection of claim 8, and any pending claims dependent thereon be withdrawn.

IV. All Dependent Claims Are Allowable Because The Independent Claim From Which They Depend Is Allowable

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claims 1 and 8 are patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

V. Conclusion

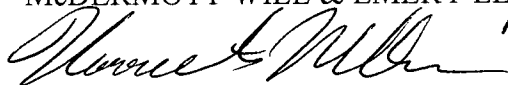
Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication of which is respectfully solicited.

Application No.: 10/562,792

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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